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Doc Code: Artifact

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Artifact Type Code: U

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U.S. Priority Document

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07/05/01
Jc796 U.S. PTO

The United States of America



The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

J. Todd Ichni

Acting Commissioner of Patents and Trademarks

Sharna J. Cooper

Attest

060668/60
Jc888 U.S. PTO
09/09/99





US005919507A

United States Patent [19]

Beelman et al.

[11] Patent Number: **5,919,507**[45] Date of Patent: **Jul. 6, 1999**[54] **PRESERVATION COMPOSITIONS AND METHODS FOR MUSHROOMS**[75] Inventors: **Robert B. Beelman; Eric M. Duncan,**
both of State College, Pa.[73] Assignee: **The Penn State Research Foundation,**
University Park, Pa.[21] Appl. No.: **09/120,905**[22] Filed: **Jul. 22, 1998****Related U.S. Application Data**

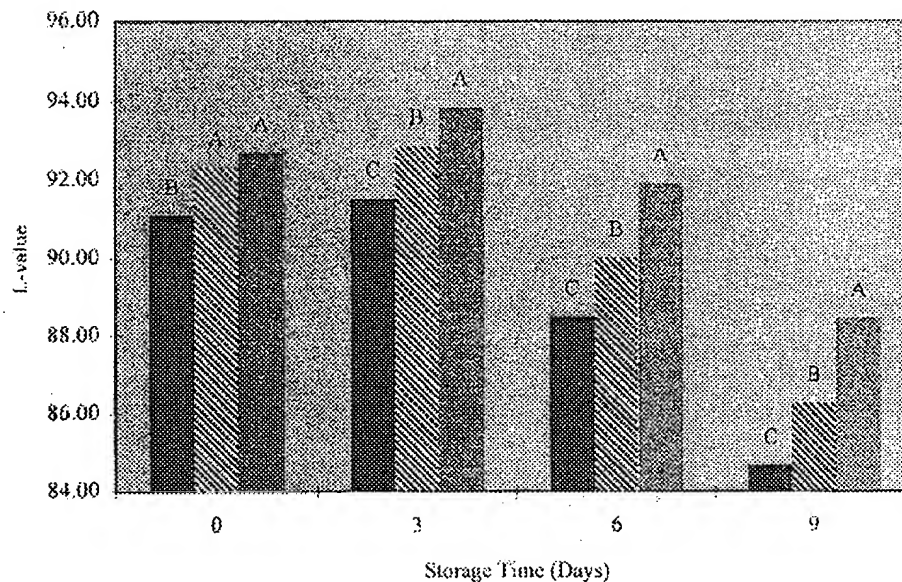
[60] Provisional application No. 60/060,670, Oct. 2, 1997.

[51] Int. Cl.⁶ **A23L 3/34**[52] U.S. Cl. **426/268; 426/303; 426/310;**
426/335; 426/615[58] Field of Search **426/335, 303,**
426/310, 615, 268; 252/380[56] **References Cited****U.S. PATENT DOCUMENTS**

3,718,482 2/1973 Hinkley 99/150

Primary Examiner—Nina Bhat
Attorney, Agent, or Firm—Thomas J. Monahan[57] **ABSTRACT**

Preservative compositions using toxicologically acceptable ingredients, and employing a pH of 9.0 or above for at least part of the process, for controlling the growth of spoilage bacteria and for preventing unwanted color changes in fresh and processed mushrooms. Aqueous solutions of preservatives are prepared and applied in multiple stages to the mushrooms, by spraying or immersion. More specifically, disclosed is a method for preserving fresh and processed mushrooms, comprising the steps of: contacting the mushrooms with an antimicrobial buffer solution having a pH of from about 9.5 to about 11.0; and rinsing the mushrooms one or more times immediately after the contacting step with pH-neutralizing buffer solutions of erythorbic acid and sodium erythorbate, in ratios of about 1:4, with a sufficient pH to return the mushrooms to the mushroom physiological pH of about 6.5.

8 Claims, 20 Drawing Sheets

- 1. Sodium bicarbonate @ pH 11.0, 120s; 0.8% Ea + 3.2% NaE, 60s
- 2. Sodium bicarbonate @ pH 11.0, 120s; 0.8% Ea + 3.2% NaE + 1000 ppm EDTA, 60s
- 3. Sodium bicarbonate @ pH 11.0, 120s; 0.8% Ea + 3.2% NaE + 1000 ppm EDTA + 1000 ppm CaCl₂, 60s

aintenance fees
1 years and six
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